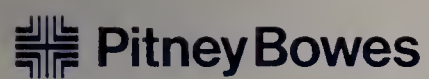




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The airlines need new business models.
Can IT makeovers help create them?

BY KIM S. NASH

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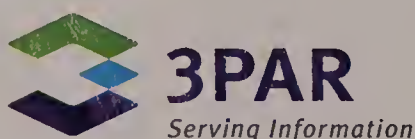
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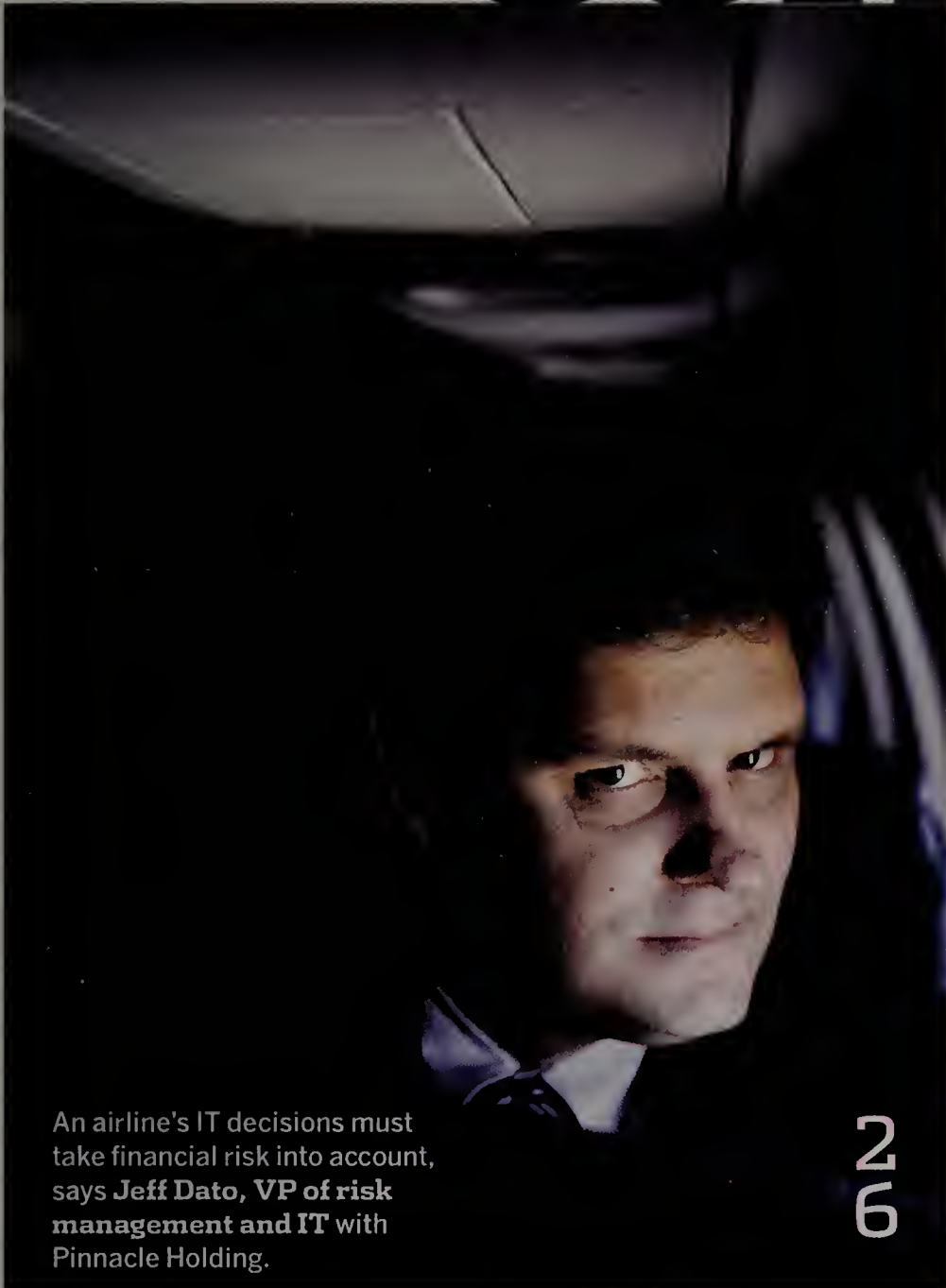


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Recession-Proof Your ERP Vendor Strategy

Forrester Research weighs in on negotiating contracts, avoiding lock-in, tapping into best-of-breed apps and reducing ERP maintenance costs.

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The Big Windows 7 Problem: XP Holdouts

The release of Windows 7 beta has Microsoft touting the OS's ease of use and versatility. But it's an open question whether Microsoft can convince its most skeptical critics: Windows XP holdouts.

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[SLIDESHOW]

Hot New Tech

The Palm Pre, mini-laptops, a cell phone wrist watch and more from this year's Consumer Electronics Show. cio.com/special/slideshows/2009/01/ces_cooler_technology/index

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Reinvention Time

From the airlines to Starbucks, customers drive change



About two weeks ago, we were a nation mesmerized by the unexpected happy ending for US Airways Flight 1549. The plane crash-landed in New York's frigid Hudson River, yet everyone on board was saved by the skill of one heroic pilot.

Information technology didn't fail US Airways in this case—an errant flock of birds may have brought its engines to that disastrous halt—but neither could IT have saved the day. Some risks occur beyond the rescue of even the very

best technologies.

As we explore in our "Project Runway" cover story, the risks of a badly damaged business model seem almost as dire to the airline industry as that flock of birds.

"We're all one bad day from having our doors close," notes one airline exec. Then again, he adds, challenging times are when IT can really leverage "a wonderful opportunity to make an impact."

As the airline CIOs grapple with the whiplash of a global economic recession, there are many useful lessons for other IT leaders. Our story details the IT and business strategies of several airlines and delves into the technologies they hope will actually attract customers (rather than further repelling us). Frequent fliers everywhere wish them "Godspeed."

Another customer-centric story in this issue takes you inside Starbucks for a visit with the coffee chain's new Gen-X SVP and CIO Stephen Gillett. This 32-year-old MBA-schooled IT exec wants to help restore its flagging business by understanding customers "in ways we've never had to in the past." Gillett's mission centers on a tech vision that keeps *external* customers front-and-center in the business thinking that happens inside the IT operation. That shift outward toward serving the people who buy the company's products—and away from IT mainly serving the internal business-unit "customer"—is a trend we saw rising sharply in our 2009 State of the CIO research (www.cio.com/article/470377).

In keeping with this rising tide of customer refocus, we have redesigned *CIO* magazine to more directly reflect your business roles. In our March issue, you'll see a bold new streamlined design, with targeted sections devoted to running and growing your business, advancing your career and connecting with your peers.

I'm counting on all of you, our customers, to let us know if we got it right. Not so much a happy ending as a great beginning.

Maryfran Johnson, Editor in Chief, *CIO* Magazine & Events
mfjohnson@cio.com



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Maryfran Johnson

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CONTRIBUTORS

Robert D. Austin, Jackie Barretta, Owen Edwards,
Grant Gross, Robert Lemos, James Niccolai,
Richard L. Nolan, Shannon O'Donnell,
Stephanie Overby, John Ribeiro, Cindy Waxer

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DESIGN

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Terri Haas, Steve Traynor

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ONLINE EDITORIAL INTERN
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RESEARCH

RESEARCH MANAGER
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CXO Media Inc., 492 Old Connecticut Path,
P.O. Box 9208, Framingham, MA 01701-9208

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Our Elastic Future

Get ready for a world of completely flexible resources



I recently talked with Kishore Swaminathan, Accenture's chief scientist. It's always enlightening (and somewhat nerve-racking) when you discuss the future with someone who has such a clear vision of what lies ahead. Our conversation centered on Accenture's "2009 Technology Vision" report and the trends Swaminathan is seeing.

His overarching premise is imagining "a world in which our capabilities can expand or contract at will, in essence elastic, no longer subject to the constraints of physical reality," such as location, distance, language or organizational affiliations. In such a world, organizations compete based not on what they have but rather on knowing and getting what they need.

The five dimensions of this "Everything Elastic" world are:

1. Elastic Workforce: As work becomes more location-independent, who you work for and how you monetize your work changes. Ultimately, companies become "loose affiliations of people and work becomes 'open.'"

2. Elastic Services: Providers will come from many different places where "branding and white labeling will be rampant." This will cause customer frustration, presenting opportunities for companies that can provide a cure for it.

3. Elastic Processes: Business processes, just like infrastructure, will be able to expand or contract based on business demands. This outcome will be driven by the decoupling of business process from traditional software systems or by partnering with organizations outside company walls.

4. Elastic Innovation: "Open Innovation" becomes the norm, with anyone able to partake in the traditionally closed models of R&D. We're already seeing this start to occur with the growth of open innovation communities like InnoCentive.

5. Elastic IT: IT costs will track more closely to the immediate needs of the business. In essence, "the gap between innovation and industrialization will narrow since successful innovations can be rapidly scaled up and unsuccessful innovations scaled down without requiring large capital investments."

What makes this report worth reading is the way it explores the technology trends and market influences shaping this premise of "Everything Elastic."

If you would like a copy of your own, just send me an e-mail and I will be happy to pass one along.

Michael Friedenber, President and CEO
mfriedenber@cio.com



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EDITED BY STEFF GELSTON

NEW * HOT * UNEXPECTED

A Call to Tie Pay to Risk

SALARIES As the worldwide financial fiasco unfolded over the past year, risk became the buzzword in boardrooms around the globe. And as analysts began circulating white papers on the need for risk-adjusted compensation, the question for many C-level leaders has become: How will this affect my personal bottom line?

The rationale for a no-pay-for-nonperformance system stems from the idea that there is a tendency for leaders and individual employees to focus on their short-term compensation and not think about the long-term risks that their choices create for the company. Under a risk-adjusted compensation system, salaries are adjusted downward in the short term, in accordance with the level of risk being generated for the firm. If that risk doesn't materialize, the executive or employee receives the deferred compensation.

"There's definitely a trend toward more risk-adjusted compensation in financial services in particular," says Gerard McNamara, managing partner of the CIO practice for executive recruiter Heidrick and Struggles. Risk-adjusted pay plans will increase in any industry where regulatory control and scrutiny are on the rise, says

Continued on Page 14



House Tech Panel Outlines Priorities for '09

CONGRESS The U.S. House of Representatives Science and Technology Committee will focus this year on improving health IT and math and science education, restructuring a research and development tax credit for the tech industry and making electronics easier to recycle, according to the committee's chairman.

Much of the focus will be on U.S. competitiveness, says Rep. Bart Gordon, a Tennessee Democrat and committee chairman. The committee will push for additional funding for the America Competes Act, a bill passed in 2007 that authorized increased government funding for basic science research, gave grants to states for math and science teaching, and money for specialized math and science schools.

Part of the committee's focus will be on recruiting female and minority students. Those groups are "woefully under-represented" in U.S. math and science

fields, says Gordon. The committee will also evaluate government math and science education programs.

Many tech companies have asked legislators to improve math and science education. U.S. students are falling behind those in other countries, putting competitiveness at risk, Gordon says.

Tech groups have also called for several other changes on the committee's agenda, including restructuring of a research and development tax credit.

The committee's work on health IT will target ways to encourage interoperable systems. Improving health IT "will save us money and will save us lives," Gordon says.

The committee will also look at ways to help electronics manufacturers make products easier to recycle, without subjecting recycling workers to health hazards.

-Grant Gross

Credit **Crunch** Squeezes Data Center Budgets

INFRASTRUCTURE More businesses plan to lower data center budgets this year, with spending on training and new hardware likely to take the brunt, according to a recent survey from Afcom, an association for data center workers.

More than one-third of respondents (38 percent) say they were asked to cut their budgets since May, when Afcom conducted a similar survey. In that survey, 19 percent expected their budgets to be cut for 2009.

The change reflects new cutbacks planned since the financial crisis exploded last fall. The average cutback will be a 15.2 percent reduction in data center spending in 2009, Afcom says.

Of those data centers asked to cut their budgets, 30 percent will reduce spending on travel; 21 percent on equipment such as servers and storage; 23 percent on training; 16.5 percent on cooling, power backup and power distribution systems; and 14 percent on staffing costs.

While travel and training feature prominently, those budgets are small relative to new equipment purchases. "Many more actual dollars will be cut on the equipment side than in areas like travel and training," says Afcom President Jill Eckhaus. That is supported by another figure in the new survey: 86 percent of respondents expect increased use of virtualization in 2009 to reduce the need to buy new physical servers.

Only 12.6 percent of data centers surveyed plan to increase their use of hosted applications next year, while 22.7 percent will increase their use of cloud computing services, according to Afcom.

Asked what impact the spending cutbacks will have, 13 percent say they'll affect salary increases, and 20 percent think they will decrease worker satisfaction. Three percent predict more service interruptions.

—James Niccolai

Pay for Risk

Continued from Page 13

Howard Rubin, president and CEO of Rubin Worldwide and a Gartner senior advisor.

Whether or not CIOs will see risk-adjusted pay bundled into their compensation packages is an open question. "It's all very hazy, but with the whole financial industry going crazy right now, everything is being looked at," says McNamara. Rubin predicts that risk-adjusted pay is more likely to increase for executives who have an influence on enterprisewide risk, not those leaders, like the CIO, who only have an influence on operational risk.

"Where you will see it for CIOs is in companies that have the belief that all compensation across the enterprise needs to be risk-adjusted and everyone's pay should be adjusted downward if bets don't go right," says McNamara. In those cases, "it's a group motivator," says Rubin, and "the CIO can play a creative role in using IT to manage firm risk more effectively."

Of course, deferred compensation based on performance is nothing new for many IT leaders. A CIO typically has a compensation package including base pay, short-term bonuses and long term bonuses in a mix of cash and equity, commensurate with other executives at their level, says McNamara. Over the past several years, CIOs have increasingly seen a portion of their pay tied to the delivery of major IT milestones.

"If you're overseeing an expensive and risky SAP implementation or downsizing 300 data centers into 10, large and midcap companies have tied CIO compensation to the successful delivery of that solution," says McNamara. In that regard, he says, "CIOs have had their feet held to the fire for a number of years. You didn't see that for the CEO or CFO or even the COO."

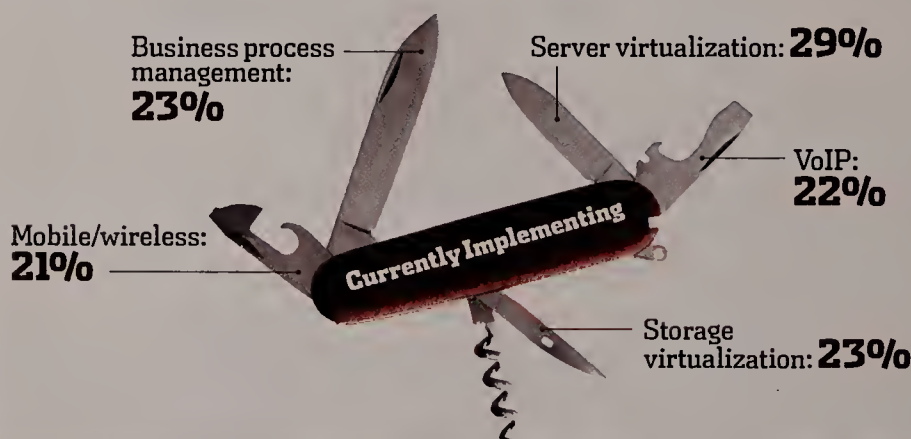
—Stephanie Overby

TRENDLINES

CIO RESEARCH

Tools IT Pros Love

TECHNOLOGY Which tools will get the nod from IT professionals in the coming year? Virtualization, business process management and voice-over-IP (VoIP) implementations top the list.





Let's leave the hardware where it is.

A software-based VoIP solution from Microsoft is a whole new way to look at telephony. As it turns out, that important move to VoIP isn't about ripping and replacing or big, upfront costs.

That's because it's no longer about hardware. It's actually about software. That's right. Keep your hardware—your PBX,

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Spammers Get Social

SECURITY Spammers and virus creators have a new path into your PC: Facebook and MySpace.

Spammers are turning to these popular social networks to trick users into installing viruses, launch fraudulent websites and deploy malware, according to a report by MessageLabs. While spamming via e-mail services remains prevalent, "spammers see social networks as the new horizon," says Matt Sergeant, senior antispam technologist at MessageLabs. Spammers have set up phony social networking accounts by breaking the safeguard known as Captcha (Completely Automated Public Turing test to tell Computers and Humans Apart), the letters you type when you register for a website that asks, "Are you a human?"

Sergeant suggests the following core security tips to protect yourself.

Redo your password. Cybercriminals are very good at obtaining social networking passwords through phishing. Beef up passwords with unpredictable letters, phrases and numbers.

Watch those third-party applications. Facebook has an ecosystem of third-party apps, from games to widgets. But some can install malware on your computer and access your personal information. So be cautious. Avoid apps that bait you with learning a piece of information by clicking on a button (this can initiate an install).

Beware user-generated spam. Social networks rely on users to post and share content. Spam-based social networkers will go to other people's comment threads, for instance, and chime in with links that, if clicked on, will install malware. So check with friends directly before clicking on their links, especially if the URL is unfamiliar.

—C.G. Lynch



Offshoring Rivals Catching Up to India

SERVICES Lower cost has long been one of India's key advantages as an offshore outsourcing location. But it may be losing this edge to countries like Pakistan and Vietnam, which now offer staff at far lower costs.

India still has an edge if clients consider staff maturity in the area of outsourcing and their ability to hire more staff in India, says Arup Roy, senior research analyst at Gartner. However, a number of countries have positioned themselves as credible alternatives to Brazil, Russia, India and China, according to Gartner's list of the top 30 countries for offshore services.

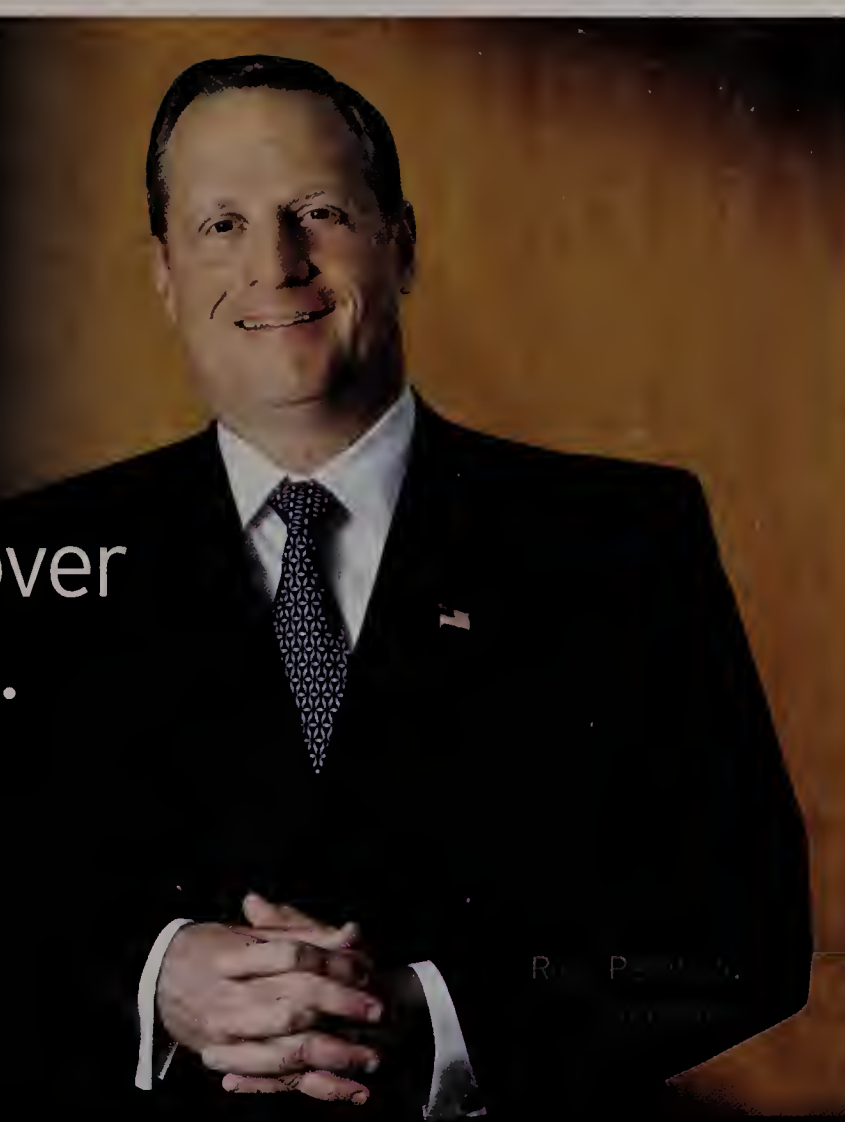
Mexico, Poland and Vietnam continue to strengthen their position while others are making their debut in the top 30, according to Gartner. These countries seek to capitalize on the focus that organizations have on cost optimization as a result of the economic crisis, adds Gartner.

Of course, cost isn't everything. Different clients have different priorities, according to Roy. If they are looking for strong IP protection and security, they will look at Singapore or Australia as offshore locations rather than India. Indian laws for enforcing a contract are very lax, he says. Countries like the Philippines and Vietnam do not have as severe a problem with staff attrition as does India, he adds.

Having services centers near shore is likely to be critical for outsourcers in markets like the U.S., as customers now use a mix of low-cost offshore locations and near-shore locations to meet their requirement of greater control, cultural similarity and similar time zones, Roy says.

Latin American countries are becoming an attractive proposition for the U.S., Gartner says. The countries from the Americas listed by Gartner are Argentina, Brazil, Canada, Chile, Costa Rica, Mexico and Panama. These countries are increasingly able to take advantage of their Spanish-language skills in the U.S., as more organizations now require Spanish language from their providers for communication with Spanish-speaking parts of their workforce, Gartner says.

—John Ribeiro

A portrait of Ross Perot, Sr., a man with dark hair, smiling, wearing a dark suit, white shirt, and patterned tie. He has his hands clasped in front of him.

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Online collaboration opens doors and saves money

ACS and its clients use Web 2.0 tech to share ideas, boost productivity and strengthen relationships

Chris Mankle, CHIEF TECHNOLOGY OFFICER, IT OUTSOURCING, AFFILIATED COMPUTER SERVICES (ACS) INC.

Mankle leads ACS' CTO office by driving and delivering innovation. In his role, he's charged with identifying and analyzing new technology trends, process advances, industry changes, and market transitions for ACS.

Web 2.0 tools aren't brand new, but ACS is taking advantage of Web 2.0 technologies to build upon face-to-face relationships with its clients. By utilizing tools such as wikis and blogs, and creating online social networks, Mankle says, ACS can enhance connection and collaboration with its clients in a faster, more productive way.

"Web 2.0 drives transparency, increases productivity and helps shorten the time between interactions."

Mankle recently spoke with CIO to discuss how Web 2.0 tools are enabling ACS and its clients to communicate and collaborate—whenever they want, from wherever they are.

What types of business value does Web 2.0 technologies allow ACS to provide its clients?

Collaboration drives innovation. By connecting with our clients and sharing information through an interactive Web 2.0 environment we've developed, ACS can tap into what's top of mind with our clients. For ACS, collaboration is a natural extension of our focus on client intimacy, which is a key differentiator for us.

Can you offer an example of how ACS' applied technology is manifested in the Web 2.0 world?

A key tool that we have established for both ACS and our clients is online col-

laboration, which provides the ability to access a portal, share ideas, and have peers provide feedback. We're working with our enterprise and public-sector clients to put more of their information online, taking advantage of the infrastructure we have so our clients get to see the breadth of ACS on a global basis—regardless of their

specific industry or market segment. This also improves access to information in a knowledge world.

How have Web 2.0 tools been applied by ACS' clients in the public sector?

As I mentioned earlier, we're making more information available online for clients in the public sector to enable "face-to-face" interaction over networks. Our web-based capabilities also support food-stamp programs and E-Z Pass systems. In many cases, we take what we learn in enterprise and apply it to state, local and federal government clients—and vice versa. We work to find the best and brightest ideas, and apply them for clients across market verticals.

How does Web 2.0 help ACS stay tuned into its customers' needs?

An online portal offers ACS and our clients another way to collaborate without being afraid to express concerns. In fact, Web 2.0

drives transparency, increases productivity and helps shorten the time between interactions. For example, you can schedule an in-person quarterly meeting, but you have the ability to communicate and collaborate between scheduled meetings through blogs and other RSS formats—so you're constantly sharing ideas.

In what ways are Web 2.0 technologies supporting clients' green initiatives?

First and foremost, it minimizes travel. With the virtual office, boundaries are eliminated and collaboration can go global. Employees and clients can easily exchange ideas by meeting virtually and, at the same time, can reduce greenhouse gases and travel expenses. But in doing this, we have to start to change habits, and make sure people understand the value of virtual collaboration. Really, if you have strong relationships and you utilize Web 2.0 tools, you don't need to see clients and colleagues in person as often.

FOR MORE INFORMATION:

Download a copy of ACS' white paper on applying Web 2.0 technologies, at www.cio.com/white-papers/acs_collaboration. Further information can be found at www.acs-inc.com

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Global Collaboration W 2.0 Solutions

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technology



CIOs embrace the Web's social spirit to find cost-free IT solutions beyond the firewall. But the kindness of strangers has its downside.

Free to Collaborate

BY CINDY WAXER

WEB 2.0 | Overwhelmed by the plethora of disk encryption software options available today, Richard Morton, chief administrative officer at financial services firm InvestLinc, desperately needed assistance selecting just the right solution.

Morton, who acts as the Ohio-based company's CIO, required a program to protect the highly sensitive information residing on employees' laptop computers. He considered soliciting feedback from a high-priced consultant, a seasoned systems integrator and his own IT team. Instead, Morton sought the guidance of perfect strangers.

That's because Morton is a member of Spiceworks Community, part of a free, Web-based collaborative IT management application that lets IT professionals develop, share and rank best practices, products, services and reports. Welcome to the world of Web 2.0 IT management, where collaborative tools like Spiceworks are granting CIOs unparalleled access to external brain trusts.

Morton is one of a growing number of CIOs reaching beyond corporate firewalls for advice on IT-related topics ranging from best practices to quick software fixes. Faced with limited internal resources and whittled budgets, they are embracing the Web 2.0

spirit of collaboration once reserved for renegade developers and open-source pioneers. In fact, many of today's collaborative IT management tools—such as FiveRuns' TuneUp, Paglo Community and AlterPoint's ZipTie—are based on or incorporate open-source technology.

"CIOs are searching for a way to save money and to gain more efficiency so they're looking beyond their own organization for advice, input and access to new people," says Jeffrey Mann, a Gartner research VP and agenda manager for collaboration.

But while CIOs are finding that today's collaborative IT management solutions provide rapid and cost-free responses to major IT hurdles, there are regulatory and confidentiality issues to be considered when stepping outside the firewall to solve problems.

Money-Saving Advice

In Morton's case, after sifting through a Spiceworks Community thread on hard disk encryption applications, he found TrueCrypt, a freeware solution earning raves from community contributors.

"Freeware has always been a bit scary to me," says Morton. "Whenever I've looked at hard drive encryption applications, the freeware packages always seemed complicated for end users."

But "high votes" from fellow IT professionals convinced Morton to deploy TrueCrypt—a move that saved InvestLinc an estimated \$4,000 in software expenses. What's more, because Spiceworks is completely free (the software is supported by ads) and provides InvestLinc with help desk and IT inventory capabilities, Morton estimates the solution saves the firm nearly \$100,000 in technology expenditures. "There's a whole community out there willing to share and offer a nonbiased opinion on the applications that you're interested in," he says. "The value is huge."

Benefits extend beyond free advice from external experts. Michael Coté, analyst and IT management lead with

There are regulatory and confidentiality issues to be considered when stepping outside the firewall to solve problems.

RedMonk, a research firm, says these communities allow CIOs to build a name as indispensable team leaders in tough economic times. "The more chances you have to show off and document how smart you are to potential and future employers, the better," he says.

Although not an open-source solution, Spiceworks was developed using the Ruby on Rails open-source platform. But there are plenty of open-source IT management tools to choose from. Open-source vendor FiveRuns recently unveiled its TuneUp service, which lets administrators take a snapshot of a problem they're encountering with a Rails installation. By loading this snapshot onto a public TuneUp community, participants can solicit feedback and receive suggestions for quick fixes.

Paglo is another example of an open-source collaborative IT management solution provider whose online community not only lets subscribers swap best practices, it also lets them publish dashboard formats for system, server or network monitoring to the community.

"The idea that different companies would pool raw data and information beyond their firewall creates all sorts of interesting possibilities," says Coté.

Proceed With Caution

But seeking the advice of virtual strangers also creates new risks. For example, publishing proprietary information is an invitation to disasters such as data theft, denial of service attacks and regulatory compliance violations.

"I've seen people reveal their entire

IT inventory," says Morton. "You have to make sure that the information you put out there doesn't contain sensitive data."

Some vendors, like Paglo, automatically strip content that's been submitted so that syntax—not data—is shared with the community. Contributors can also opt to have information stay within the confines of their company. However, warns Coté, it's up to a CIO to create a "filtering process" for online collaboration, as well as strict usage policies.

Community size is also something to consider. "You want to be in a community that's large enough that it smooths out the bumps," says Coté. Spiceworks claims 500,000 members. "Inaccurate data will get into the community no matter how cleansed it is, so you can't believe everything you read on the Internet."

Drawing from the collective wisdom of your peers can sometimes compromise workplace productivity. Morton recalls a Spiceworks conference where a member was rewarded as "a power contributor" to the community. "I leaned over to the person next to me and whispered, 'Does this guy have a job? Where does he find the time?'" he chuckles.

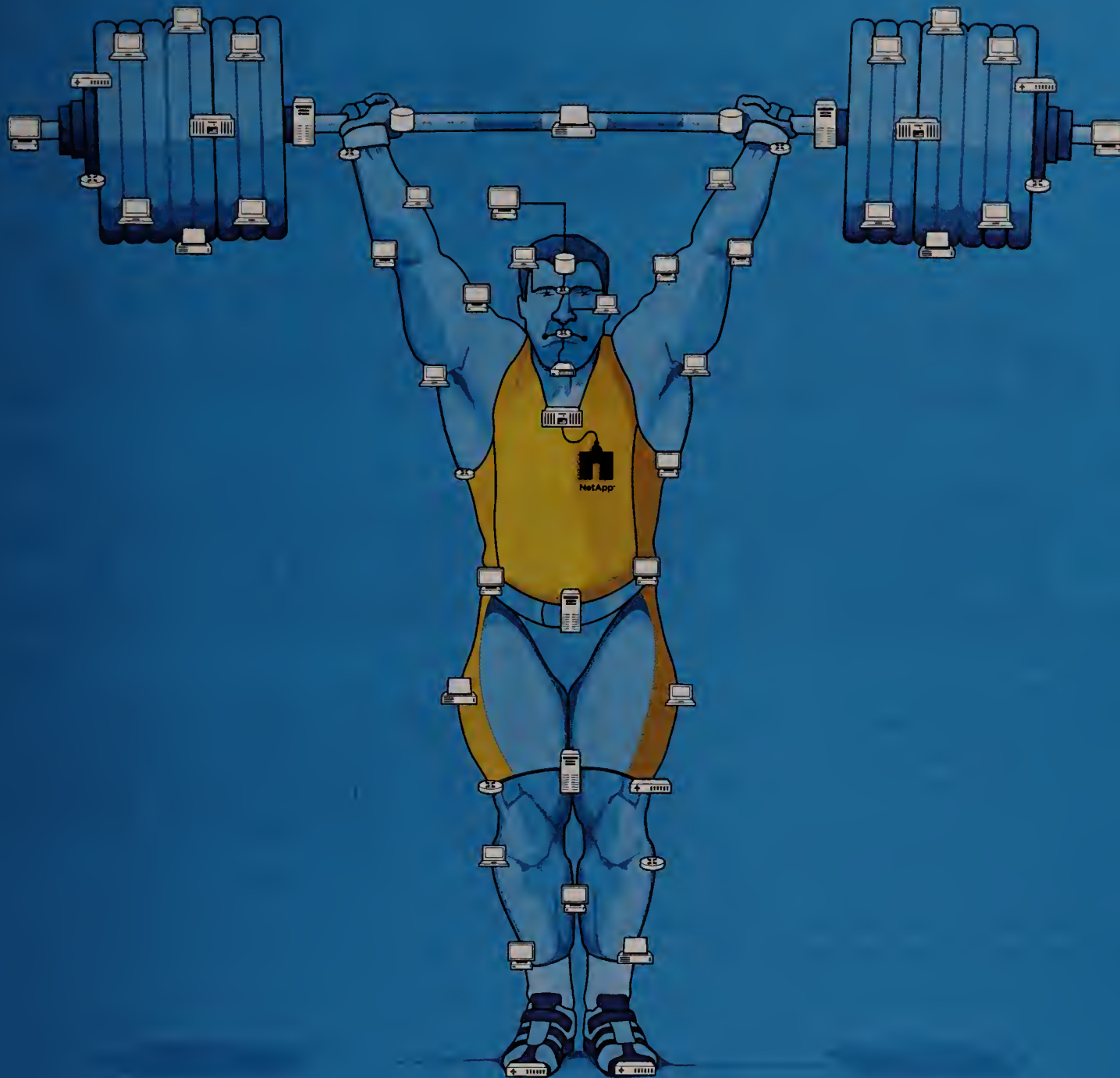
No wonder then that many CIOs prefer a low profile within these communities, clearing center stage for developers with plenty to share and less to lose. Fortunately, reducing one's exposure to risk doesn't have to eat into the value proposition of online collaboration. With the right amount of distance, discretion and critical thinking, today's collaborative IT management tools can help CIOs tap into the masses for expert IT advice. **CIO**

Why You Should Collaborate

Read an interview with Futurist **DON TAPSCOTT** about online collaboration at www.cio.com/article/107253.

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Cindy Waxer is a freelance writer based in Toronto. To comment on this story go to www.cio.com/article/476127.



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Don't Dump Old Notebooks Yet

New netbooks need more power and resolution to win acceptance

BY ROBERT LEMOS

COMPUTING | Despite the recession, netbooks are in strong demand. Consumers who balked at spending \$800 or more for a full-featured laptop seem willing to pay half that for fewer features in a smaller package. Business people are buying the computers too, as personal or secondary machines for those times when sleeker is better.

Netbook computers have changed a lot in the year since they debuted. When netbooks hit the market with Asus's

mobile computing at Gartner. "They are coming in as companion notebooks, as second notebooks, that workers are buying themselves," she says. "The question is whether netbooks are ready to come in as a sanctioned corporate laptop."

While the price is persuasive, the machines are not yet mature enough for the workplace, Fiering says. Most companies need Windows XP Professional or Windows Vista, not the Windows XP Home edition or Linux OS loaded

the market in 2009 and 2010. That's another reason for businesses to wait, says Fiering. "There is no system or platform stability," she says. "The models are going to churn very quickly, so it's early to think about buying them for your workers."

What's Hot Now

Top dog of the netbook pack is Acer's Aspire One, according to market tracker DisplaySearch. It has a 1.6GHz Intel Atom processor, 9-inch screen, 512MB (upgradable to 1GB) of main memory, a 120GB hard drive and comes with Linux Lite. It weighs 2.2 pounds and sells for under \$400. Asus sells a similarly configured machine, the Eee PC 904HA, for under \$400. It weighs slightly more than 3 pounds.

HP and Dell have also entered the market. HP's sub-\$400 notebook, its Mini 1010NR, has a 9-inch screen, 512MB of main memory, an 8GB solid-state drive, comes with Windows XP Home and weighs 2.3 pounds. Dell has a similar sub-\$400 configuration, the Inspiron Mini 9, weighing 2.3 pounds.

One certainty: The evolution toward smaller devices will continue, says Fiering. "It has been going on for the entire history of notebook computers," she says. "The holy grail is to have something the size of a Blackberry that has all the functionality that you need." **CIO**

"[Netbooks] are looming as second notebooks that workers are buying themselves."

—Leslie Fiering, VP for mobile computing, Gartner

release of the Eee PC, they typically had 7- to 8-inch screens. Most shipped with the Linux, an operating system considered daunting by many users.

With the arrival of netbooks with 9- to 10-inch screens and the widespread availability of models running Windows XP, demand has taken off. The pint-sized portable computers dominate the top five slots on Amazon.com's list of best-selling laptops, most sporting prices of less than \$400.

Not Ready for Primetime

But that does not mean that netbooks are ready to take over the enterprise, says Leslie Fiering, research vice president for

on netbooks. At a typical 1024-by-600 pixels, screen resolution is too low for many applications. Surfing the Web, for instance, often requires users to scroll their browsers up and down to view a full page. The netbook's single-core processors are powerful enough to run many applications, but will bog down and cause delays with virus checkers and background printing.

"If you are a CIO who is trying to plan for the future, it is hard to commit to a platform like that," says Roger Kay, founder and president of market researcher Endpoint Technologies Associates.

More powerful netbooks will hit

Robert Lemos is a freelance writer. To comment, go to www.cio.com/article/470976.

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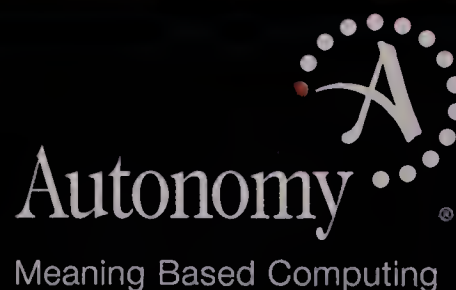
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| The airlines need new business models

PROJECT

SOMETIMES IT'S HARD TO TELL THAT A BUSINESS MODEL

is broken. Then events startle you to clarity. For instance: The same week in 2007 that Airbus delivered the largest passenger plane ever built (four jet engines, 471 seats), the trade magazine Airfinance Journal, citing the industry's cry for fuel efficiency, hailed the "return of the turboprop," an airplane invented in the 1930s that uses a gas turbine to turn a propeller.

Other times, the revelation comes in numbers. Ten years ago, a barrel of oil was about \$16 and flying planes was lucrative. U.S. airlines together made \$5.3 billion in 1999, which would be the industry's most successful year ever. Collective net earnings dropped by nearly half to \$2.5 billion the following year, leading to five years of losses that began as the dotcom economy burst. Then came the 9/11 terrorist attacks, which grounded planes for three days and scared customers away from the skies for

BY KIM S. NASH

Reader ROI

- :: How IT defines airline business models
- :: Approaches to technology investment and labor management
- :: Addressing the limits of legacy systems



Can IT makeovers help create them? |

RUNWAY

months, even years. Oil, meanwhile, climbed to all-time highs, eviscerating any hope of airline profits. The industry was profitable in 2006 and 2007, but now we're in an economic death spiral that touches virtually all industries in many countries around the world. When the airlines close the books on 2008, they are expected to lose up to \$10 billion—twice as much as they *made* ten years ago.

"You just kind of shake your head," says Carter Stewart, managing director at Trans World Consulting, an airline consulting firm in London. After nine years, several shotgun mergers and a \$15 billion federal bailout in 2001, the industry is no better

off, he says. There are too many planes flying too many places, producing high demand for expensive jet fuel and, some say, an unwinnable competition. Customers routinely complain that they can't get the flights they want when and where they want them.

So the airlines are trying new tactics, such as cutting flights, hedging fuel costs and offering passengers amenities such as in-flight Wi-Fi. Plus, the so-called "unbundled services model" has some airlines selling everything from pillows to luggage space to meal deals.

But these tactics require technology support—and in few industries is the business model as baked into the IT as in the airlines, says Stewart, who formerly directed project management offices at American Airlines, TWA and London-based Silverjet. Who hasn't stood in front of an agent at the airport, listened to her clack on an unseen keyboard for several minutes—no mouse, no touch screen—only to hear, "I'm sorry, the system won't let me do that"?

Most legacy proprietary reservations systems can't do everything a Web-based booking system can do, such as pre-sell an onboard snack to one customer and—at Air Canada anyway—subtract the cost of that snack for another customer who wants to bring his own. "Technology is lagging where airlines want to be right now," says Darin Lee, a consultant who specializes in the economics of the airline industry at LECG, an economics consulting firm.

How some airline CIOs are grappling with the crisis brings lessons to other IT leaders facing near-crippling economics, where major new systems development is being deferred, layoffs appear likely and budgets are being starved to conserve cash.

For example, Southwest Airlines, which used to be known



At Pinnacle Holding, IT investments must reduce financial risk, says Jeff Dato, vice president of risk management and IT.

as a no-frills cattle-caller, now uses technology to provide darn-near luxury services to its customers, such as the ability to change flights with no fee. Sabre Holdings, which provides reservation systems and other software and services to Southwest and American Airlines, among hundreds of others, is using deft, money-saving ways of handling IT labor issues. And Pinnacle, a low-cost regional carrier based in Memphis, Tenn., is finding success by approaching IT as neither a cost center nor a source of innovation but as a risk to be managed.

All you hear about the alignment of people, process and technology with business strategy is playing out—quite painfully—in the airline industry.

"A lot of people questioned my sanity, coming to an airline," says Jeff Dato, who joined Pinnacle as vice president of risk management and IT in 2006. "We're all one bad day from having our doors close," he says of the turbulent industry. Then again, he adds, this challenging time "is a wonderful opportunity to make an impact."

Designing IT for Customers

As much as consumers may perceive "the airlines" as a monolithic business—created, it sometimes seems, to make travel as hellish as possible—each carrier deals with different IT problems and business problems.

At US Airways, the CIO spot has been vacant since Joe Beery left late last year to become SVP and CIO at pharmaceutical company Invitrogen. At Continental Airlines, work recently started to integrate its reservations, ticketing and other systems with those of the Star Alliance, a network of 21 airlines that share customers. Any difficulties that may arise from the technology

integration present a "significant" financial risk to Continental, according to documents the airline filed with the Securities and Exchange Commission.

Meanwhile, American and United, which have been around for decades, use some technology that is also decades old. Changing these systems can take a lot of time and requires programmers to know the proprietary software well, says Raphael Bejar, CEO of Airsavings SA, an airline IT provider. Even former scrappers like Southwest and JetBlue now have legacy technology that can limit the services they offer and the ways they can spark revenue, Bejar says. While each carrier has its own problems, some issues stretch across companies. Namely, at every airline, everyone from the CEO down must fight to win customers, while at the same time getting as much revenue as possible from each one.

Several airlines, such as US Airways and United, now charge for pillows, headsets or other niceties aboard the plane, as well as for services such as checking bags. These items used to be folded into the cost of a ticket. The idea now is to let customers choose which products to buy, thereby generating new revenue.

Flight attendants and gate agents conduct the transactions in various ways. US Airways, for example, is testing handheld devices from Guest Logix to process credit card payments onboard its planes. The goal is to eliminate cash in flight this year, says Lisa LeCarre, the president of the union for US Airways Phoenix-based flight attendants. Selling items on the plane rather than at the time of ticketing means that these transactions don't go through US Airways' reservation systems—minimizing the IT work necessary to process the purchases.

Air Canada, however, goes further with unbundling, offering a buffet of options for fliers to buy or reject when booking a ticket. Air Canada built the Web-based system in 2006, separate from its traditional reservation service provided by Galileo. A year later, Galileo built a desktop version to roll out to travel agents so they, too, could access the à la carte products that Air Canada now offers.

Customers at the airline's website can choose from four levels of options, with goods and services ranging in price. For example, passengers can add extra services to their fare, such as prebuying a meal and a snack at a discount. Sometimes, customers can opt for ticket discounts, too.

The strategy seems to be working for Air Canada. As of last September, ancillary revenue per passenger totalled \$210 million, up \$71 million since 2005, according to a company presentation to investors. And 49 percent of customers choose a ticket fare other

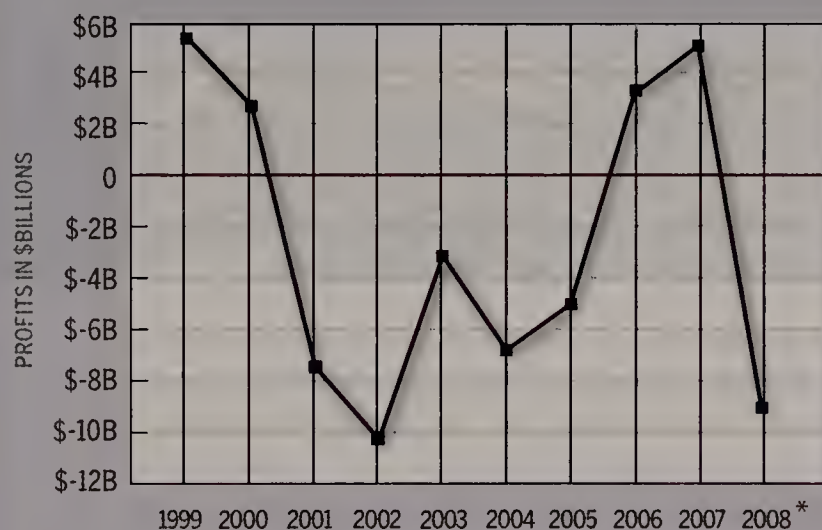
than the lowest available.

Trans World's Stewart predicts that unbundling will be short-lived. The revenue gained from selling add-on products can't fully compensate for volatile fuel prices raising flight costs and too many available seats pushing ticket prices down, he says. Plus, modifying legacy reservation systems across the industry, such as Galileo, Sabre and others, to track all the products available from the airlines and the hundreds of sales combinations will take too long and cost too much, he says.

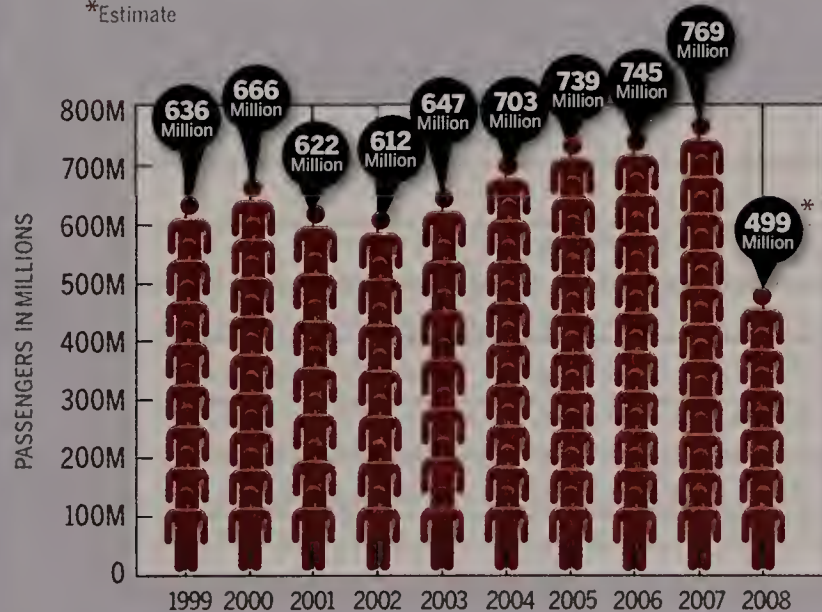
An airline bringing the idea to a reservation systems supplier, he says, would probably hear a response that asked for

Gray Skies

It took five years after the 9/11 terrorist attacks for airlines to regain profits, as passenger volumes recovered. But recent record oil prices and a world-wide recession have dealt another blow.



SOURCE: Air Transport Association of America
*Estimate



SOURCE: Air Transport Association of America, Bureau of Transportation Statistics
*January–September 2008



Allowing customers to choose their seats in advance meant Southwest Airlines CIO Jan Marshall had to replace many back-end systems.

a feasibility study, requirements documentation, a change request and time for testing. Then the reservation vendor would develop a quote for the job. "All of this would take four or five months and nothing's been done yet," he says. "These types of things are very slow."

Southwest, meanwhile, is using IT in a different way to target customers. Business and IT strategists with the company maintain that charging extra for such items as snacks bothers customers. "We don't expect our customers to have to pay for every little service we offer," says Jan Marshall, Southwest's CIO. "It's part of flying."

Instead, Southwest is trying to attract passengers by making flying more pleasant. In 2006, Southwest executives, seeing the strain the airline industry was enduring, discussed ways to maintain market share by improving their customers' experience. One simple question, Marshall says, set off hot debate and ultimately spawned a major IT project: Should Southwest assign seats?

The airline had historically asked customers to wait at the gate and be seated on a first come, first served basis—kind of like lining up for concert tickets. Then it switched to group boarding; For a while, agents handed out colored boarding cards to each waiting passenger. Then management wondered whether to refine seat assignments further.

Marketers, technologists and operations specialists alike fanned out at various airports to test theories on live customers, then watch their behavior. Such customer anthropology can mean the difference between wasted and well-spent IT dollars, Marshall says.

"What we discovered was that our customers didn't want assigned seats. They wanted to pick their seats but didn't want to stand in line," she says. "Our people saw that right away without building a prototype system back in headquarters that might have made the wrong assumptions." However, from this research grew an eight-month project that, at its height, involved more than 500 employees across the company as well as outside contractors.

Southwest defined three objectives: to assign boarding classes to all ticket holders; to let customers choose to pay \$10 or \$20 to board early; and to single out Business Select members (Southwest's elite frequent flyers) to board first. To accomplish these goals Southwest is replacing many of its back-end systems with a service-oriented architecture built on SAP financial and HR applications, among other investments.

The company divided IT workers into about 15 teams to work on the various platforms on which Southwest does business. These include its website, the frequent flyer and airport systems, revenue reporting, as well as the reservation engine and

booking system. "When we roll something out, we roll it out to all our customer touch points," Marshall says.

Marshall declines to say what the project cost. But working many changes to legacy systems is a burden airlines must shoulder, says Bejar of Airsavings.

Updating the Legacy Collection

In the early 1960s, American Airlines and IBM built Sabre and wowed the computing world with what was then the largest real-time corporate data processing system. Sabre became an independent, publicly-held company in 2000; today it's a \$3 billion private firm with thousands of customers. The Sabre application remains one of the biggest corporate software systems, spanning from mainframe to Java technology.

Sabre must support a variety of business models, such as unbundled or traditional ticketing, and everything in between, because of the variety of customers it serves, says Barry Vandevier, Sabre CIO.

As Sabre has evolved into an airline IT solutions provider, the company has focused on separating business rules from its code. Legacy mainframe environments from Sabre's origins were more rigid than today's technology. Sabre has invested heavily in open systems and next-generation rules engines. In

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areas where it still utilizes mainframes, Vandevier can encapsulate the mainframe logic as a service while using an open system environment or rules engine to enable the needed flexibility. "This doesn't happen overnight. We've been leveraging this product for a lot of customers for a long time."

He is trying to make modifications to the granddaddy Sabre software happen faster by using agile development techniques. Every two to four weeks, a component is delivered for tire kicking and criticism from Southwest, American or any other appropriate constituency. "Five years ago, that pace and partnership wasn't happening," he says.

The challenge is broader than making changes to accommodate unbundled product offerings. Getting the airlines' IT teams and Sabre's people to work in lockstep is key to delivering any enhancements in time to capitalize on them, Vandevier says. That starts at the top.

For example, Vandevier has a dedicated team that he considers an extension of Southwest's IT department to handle change requests or new reservation features. Marshall and

data warehousing and business intelligence. Buenos Aires is where Sabre focuses on marketing applications; a short time difference—two hours between it and Sabre's Dallas offices—make meetings convenient.

In the United States is where strategic planning of new products and services and caretaking of the Sabre reservation system, among other tasks occur. Ongoing work includes converting major Sabre products to open systems technology. Such projects include the newer SabreSonic Customer Sales and Service customer relationship management system, as well as GetThere, an application big companies use internally to book business travel.

Development for a single project is usually confined to one or two locations. Any more than that makes it hard to coordinate, and project managers can lose track of who's doing what when, Vandevier says. To help, Sabre recently built a social networking site named Cubeless, to help far-flung IT staff get to know each other and pose technology or business questions broadly across the company. All 9,000 employees have a pro-

WHO HASN'T STOOD in front of an agent at the airport, listened to her clack on an unseen keyboard for several minutes—no mouse, no touch screen—only to hear, "I'm sorry, the system won't let me do that"?

Vandevier talk through what has to happen technologically and managerially on both sides. Every month, they review in detail the projects underway.

But CIOs talking doesn't mean any real work gets done, Vandevier jokes, so he likes to have Sabre IT people on a given project connect with counterparts at Southwest more than he is in touch with Marshall. "Interaction at all levels is critical," he says, interlocking his fingers to show how tight he wants the teams.

Southwest builds its own Web applications. But when the time arrives to build interfaces between Southwest.com's back-end software and Sabre's reservation system, Vandevier's staff steps up.

With any IT project, Vandevier carefully considers to which country he assigns the work. In 2003, 85 percent of Sabre's workforce was in the United States. By 2006, it was 45 percent. The migration was planned to take advantage of deep skills available for lower pay offshore. "We're pushing for more efficiency," he says.

IT work can occur in any of the countries, but each has a specialty. In Poland, where many on staff have earned master's degrees in computer science, Sabre employees concentrate on serving growing business in the Asia-Pacific region (although they also serve other regions). In India, Sabre's slant is

file page to populate with pictures and personal and professional details. The travel agencies using Sabre and internal call centers are on Cubeless, too.

Distributing the workforce may complicate logistics but is a good financial hedge, Vandevier says. Treating IT overall as a risk to hedge, in fact, can help CIOs react more nimbly to change.

IT Through Reality Glasses

Pinnacle Holding is no American or Southwest or even an ATA. The \$790 million Pinnacle runs two regional carriers that fly customers around 35 states and Canada for Delta, Northwest (its former parent company) and other big names. But this small airline is taking bold steps to manage IT more flexibly and more cost-effectively, so it's easier to change course with the business climate. Namely, Pinnacle approaches IT as a risk to be managed and one that can help mitigate risks in other parts of the company. At Pinnacle, IT is not a cost to be borne or a magical savior that transforms.

Senior executives at Pinnacle are "extremely conservative," says Dato, the vice president of risk management and IT. He was hired in 2006 to help the company manage IT risks and those inherent

IT and Your Business Model

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DISTRIBUTING THE WORKFORCE may complicate logistics but is a good financial hedge, says Barry Vandevier, CIO of Sabre. Treating IT as a risk to hedge can help CIOs react more nimbly to change.

in being a growing airline in a chaotic economy. Dato joined Pinnacle after consulting there for about five months, from KPMG. "I'm not a technologist," he points out. "I'm in risk and operational efficiency."

A risk-based approach to technology is the successor to managing IT as a portfolio of investments, says Jim Sutter, principle at The Peer Consulting Group and a former technology executive at Xerox and Rockwell. That is, instead of balancing IT projects, CIOs should think purely as business executives, partnering with a peer to lobby for a given project within the overall priorities of the company. Being focused on risk means emphasizing how a project will prevent mistakes that the company might otherwise make, Sutter advises.

One of the first conversations Dato had with C-level executives was about the nature of risk. Some is allowable; but some specific risks shouldn't go unchecked. "There's good risk and bad risk, like cholesterol," he says.

On the bad side, for three years after its spin-off, former

parent Northwest was Pinnacle's only customer. The deal precluded Pinnacle from flying for anyone else. Pinnacle renegotiated in 2006, settling on an agreement that cut its revenue from Northwest by about half but left it free to fly for competing airlines. Diversifying customers is key to managing financial and operational risk, he says.

Now an example from the "good risk" category. Pinnacle's board requires Dato to provide metrics showing why it should fund IT requests. Board members want the usual: estimated costs and returns expressed financially and operationally. But they also want a narrative explanation of how the numbers will be achieved. Telling a story at a human level makes the risk calculation more tangible, he says. To that end, in 2007 Dato built a case for a new Web-based training system.

Ground crews, pilots and flight attendants come to Memphis, Tenn., headquarters regularly to refresh safety, mechanical and other training. What the board didn't know, Dato says, was that this travel amounted to 60,000 nights per year in

The epoxy
for the modern
IT executive.

hotel stays. A training management system from Plateau Systems that Dato proposed would provide online access to most courses, saving one to three nights of travel per person, per year and "hundreds of thousands of dollars." The board could have elected to spend the project money on other things, Dato says. But the numbers and anecdote together helped convince them to spend it on the IT work and avoid the greater financial risk of bringing employees to headquarters for training.

Overall, Dato is evaluating Web replacements for nearly all of Pinnacle's software, which was a mix of various applications from different vendors, none of which was built to work together. By midyear, most systems will be Web-based, some hosted offsite in software-as-a-service configurations, he says. The list of systems includes financials, human resources and aviation maintenance, among others.

Lawson's Human Capital Management suite, for example, replaces a group of legacy systems used for managing job applicants' data. Pinnacle HR employees had to enter data manually and generate 29 pieces of paperwork for each job seeker, according to Lawson. Being able to access this information online, along with employee personnel records and training certifications, cuts Pinnacle's compliance risk, Dato says. "Our world is heavily regulated. We needed this information more available and more complete for audits."

Fortunately for Pinnacle, with most of this spade work completed in 2007 and 2008, Dato and his 30 IT staff will ride through 2009 and into 2010 tweaking and strengthening controls. They won't have to scratch their eyes out trying to figure out which necessary IT projects to defer as cash dries up, the way many CIOs—in the airline industry and elsewhere—will spend the coming year.

Each of these airlines hopes it's making the right business, and therefore technology, choices. But no one will know for sure until the recession abates (one hopes) and customers accept or rebuff the new products, consultant Lee says.

"Airlines have been through a number of recessions, it's true. But this is not your garden-variety recession," he says. It's deep and it's global, he says, which means few, if any, bright spots for the aviation industry. But anyone, in the airline business or not, who stands still will get plowed under, adds Bejar.

"There are two types of technology people," he says. There are those who say that this is the right time to invest to prepare for upcoming growth. And there are those who won't do anything, waiting for the crisis to end. "Those," he says, "are the ones who tend to disappear." **CIO**

Senior Editor Kim S. Nash can be reached at knash@cio.com. To comment on this story, go to www.cio.com/article/476124.

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The Mistake



The Adventures of an IT Leader

By Robert D. Austin, Richard L. Nolan and Shannon O'Donnell
Harvard Business Press,
April 2009, \$29.95

A new CIO grapples with how to sell the value of IT investments and confronts a past failure

BY ROBERT D. AUSTIN,
RICHARD L. NOLAN AND
SHANNON O'DONNELL

SECOND IN A SERIES

The story so far: Jim Barton, the head of loan operations for financial services company IVK, has been tapped as the CIO by the company's new CEO, Carl Williams. The previous CIO, named Davies, has been fired. When Barton runs into Davies on a local running path a few days later, he finds out that Davies already has a new job—and thinks Barton is doomed. Barton must restore Williams's confidence in IT while he learns on the job.

FRIDAY, APRIL 6, 4:20 P.M....

BARTON'S MUSINGS about IT value finally sent him down the hall to consult with Bernie Ruben, director of the IT department's Technical Services Group.

Barton gave him an overview. "Carl is going to want to hear our ideas about how to measure IT value."

Ruben nodded. "You can distinguish, not just in IT but in other areas too, between investments that are merely "qualifiers" that keep you in business and investments that help you compete. It'd be interesting to know how much of

the IT budget we spend to qualify versus how much we spend to compete."

"And we could try to affect the distribution of expenditures across those categories over time," said Barton. "If we can reduce costs for running qualifiers, then even if their numbers increase, we might be able to reduce our total spend on them. I like the idea of taking a run through our portfolio with these categories in mind. Any chance you'd be willing to take the lead on this? I'll get Gary Geisler to help." Geisler was the IT department's financial guru.

"I'll do that and get with Geisler to prepare for the value discussion. First thing Monday morning."

Barton returned to his office, encouraged by Bernie's [ideas], but still feeling unsettled. Maybe from a different vantage-point he could see a way forward.

If IVK is the forest, thought Barton, perhaps I should start with the value of IVK? Then at least I can establish an upper bound of the value of IT.

Although he knew it to be a controversial measure, one estimate of a company's value is the price at which investors are willing to buy its common stock. How much did IT contribute to this value?

The flip side of this question was also important: How much did IT diminish this market value? Barton remembered celebrating when IVK's stock price passed \$75, giving IVK a market value of almost \$4.8 billion. Just one-and-a-half years later, after a disappointing financial result, IVK had lost more than half of its market value. What role did IT play in that loss?

WEDNESDAY, MAY 2, 1:30 P.M....

The most recent leadership team meeting had included a discussion of the company's approach to allocating resources. Each department would assess its approach to resource allocation and propose improvements to increase return on investment. In IT, this meant improving processes for figuring out which projects deserved investment.

But Barton had just come from lunch with Paul Fenton, whose infrastructure and operations domain included IT secu-

rity. Fenton had mentioned a concern that John Cho, the department's top security expert, had expressed. "We can close those security holes Cho is most worried about with an upgrade project," Fenton had said. "We've tried to get it funded twice now. Davies never could make much headway."

"Why not?"

Fenton looked uncomfortable. "I'm not sure," he said. "Geisler probably has the most complete picture." Barton thought he was leaving something unsaid.

"I'm meeting with him after lunch. I'll take it up with him."

Later, in a meeting with Geisler, Barton started with Fenton's security issue. "I'd like to get this project done."

"We can close those holes with an upgrade project," Fenton had said. "We've tried to get it funded twice."

Now Geisler looked uncomfortable. "We have a few slush funds. For when we can't get important projects approved."

"Why can't we get our projects through the same decision processes we use for business unit projects?"

"We have trouble getting some projects approved. Especially the deeply technical ones."

"So somebody thought this was not as important as the things that we did fund?" asked Barton.

"That's one interpretation," said Geisler. "John thinks there's a security hole. But it's more a professional opinion than a specific threat. So the project aimed at plugging this hole keeps losing out."

"That's nonsense," said Barton. "Did Davies present it? I might have been at the meeting."

Barton thought Geisler grew paler: "It was technical and didn't go over well."

"Who argued against this project?"

Geisler said nothing. Barton waited.

"Well," Geisler said, indignation slipping into his voice, "as I remember it...you were the biggest critic."

Barton had no memory of the meeting, but he had often complained about the way IT presented its project proposals.

"What did I say?" Barton asked.

"You said they should come back when they could speak English."

Barton remembered. Davies had flushed bright red. Now Geisler's recounting of the events on that day made Barton's own face warm. "Well," said Barton, recovering weakly, "that was unfair of me."

"Cho thought so. He almost left the company."

Barton would need to follow up on this. The company needed John Cho. Yet another reason why this upgrade project would have to be approved this time around.

"Maybe we need to get better at presenting our cases to justify IT projects."

"Maybe," admitted Geisler.

"Two objectives," said Barton, resolutely. "First, I want to find a way to fund this—an aboveboard way. Second, I want us to review the process we use to decide how to allocate IT budget dollars, how we decide what priorities to fund. And, as this situation demonstrates, we need to improve the process."

NEXT: THE WRATH OF THE CEO

Excerpted from The Adventures of an IT Leader by Robert D. Austin, Richard L. Nolan and Shannon O'Donnell, Harvard Business Press, April 2009. Austin is a professor at Copenhagen Business School and an associate professor (on leave) at Harvard Business School. Nolan is a professor at the Foster School of Business at the University of Washington, Seattle, and a professor emeritus at Harvard Business School. O'Donnell is a PhD fellow at Copenhagen Business School and a former director and dramaturg at People's Light and Theatre in Philadelphia. **CIO**

To comment on this article and to read the first installment, go to www.cio.com/article/476120.

Give me a Venti nonfat
decaf Sumatra blended
with Italian roast and two
pumps of cinnamon dolce
syrup plus a light dusting
of mocha powder...
**but hey there, aren't you
Starbucks' new CIO!! ??**

Bold changes are
brewing in IT with the
advent of new Gen-X
leadership from CIO
Stephen Gillett

BY THOMAS WAILGUM

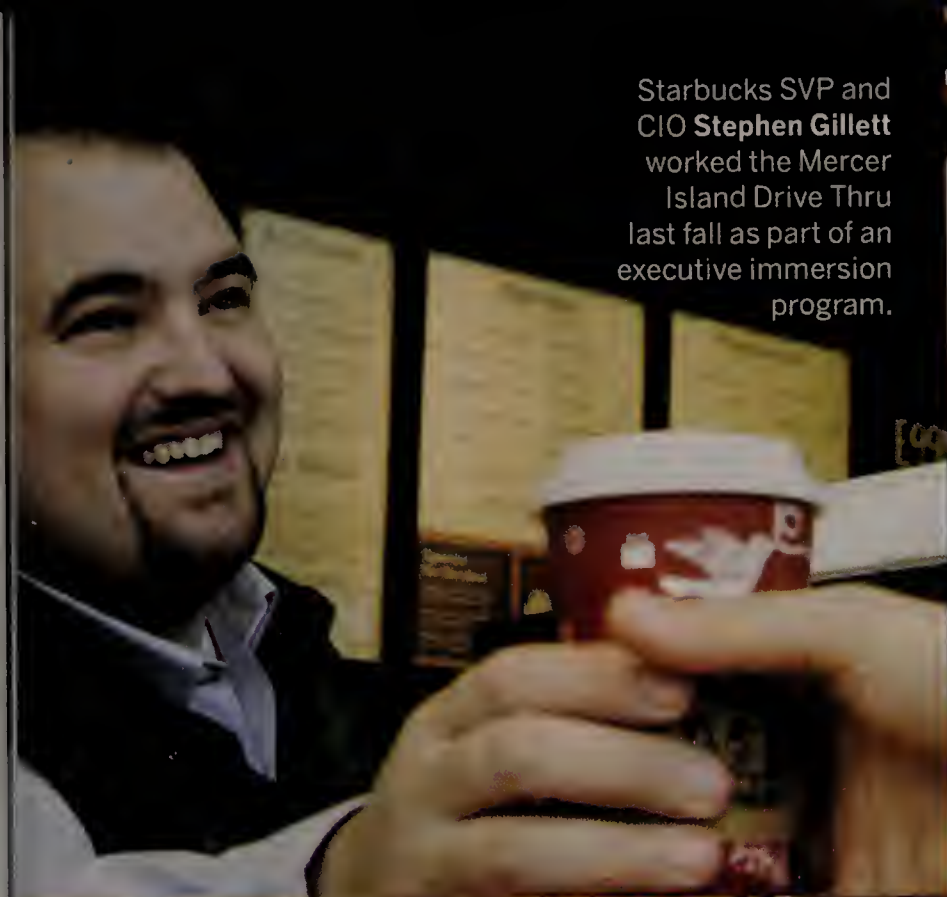
Sharp-eyed and highly caffeinated regulars might have noticed the brand-new employee at the Mercer Island Drive-Thru Starbucks in November. The newbie, wearing the standard-issue green apron, was receiving a crash course in just about every function at the 1,800-square-foot store. He took a turn as a barista, manned the drive-thru, handed out samples to customers, took out the trash and assisted a patron who was trying to connect to the Wi-Fi network. He tinkered with the store's point-of-sale (POS) system. He even did some scheduling.

What customers likely didn't realize was that the nearly six-foot, three-inch man offering them free cookie and coffee samples was not just any barista. He was Starbucks' new SVP and CIO, Stephen Gillett. To Gillett, who frothed lattes last fall as part of the coffeemaker's week-long employee immersion process, nearly every business and customer-facing process in the store was new.

Reader ROI

- :: Why Starbucks is focusing on customer relationship management
- :: How a next-gen CIO is driving that change

Starbucks SVP and CIO **Stephen Gillett** worked the Mercer Island Drive Thru last fall as part of an executive immersion program.





“They do a lot of manual things and a lot of automated things using systems and process. For me, it amplified the expediency to deliver transformational technology platforms.”

—STARBUCKS SVP AND CIO STEPHEN GILLETT

“They do a lot in the store,” says Gillett, a former CIO of stock-photography company Corbis whose background includes senior IT posts at digital media ventures Yahoo and CNET. (Gillett can claim *some* retail experience: In his younger days, he worked at a restaurant and an Albertsons grocery store.) “They do a lot of manual things, and they do a lot of automated things using systems and process. For me, it really amplified the expediency to deliver some of our key transformational technology platforms.”

Since being named SVP and CIO in May 2008, Gillett has learned all about the expediency required at his new gig—whether it’s delivering coffee to a hurried drive-thru customer or refreshing Starbucks’ core technology portfolio. And the pressure is on. Starbucks is in the midst of a grueling com-

panywide transformation to recapture the brand’s mystique with aficionados who once didn’t mind paying three to four bucks for a cup of upscale coffee. But with the economy’s unraveling, newly frugal consumers are now more concerned with paying their bills each month, not with two shots of espresso or three.

This abrupt about-face by its customer base has jolted Starbucks. In 2008, the company announced the planned closure of more than 600 of its nearly 6,800 U.S. stores and laid off more than 12,000 employees out of a global workforce of 176,000. Fourth-quarter 2008 earnings plunged 97 percent compared with the previous year, and the stock has tanked, losing half its value last year. In 2009, the company has said it expects to reduce its cost structure by more than \$400 million.

Against this backdrop, Gillett’s mission is to create and implement the technology vision of “anything that touches the consumer, whether it’s in back-end [IT operations] or in how a customer interacts in a physical Starbucks store,” says Chet Kuchinad, EVP of Starbucks partner resources, who led the team that

hired Gillett. "Stephen's not just about legacy systems and not just about efficiency. He's about how we take technology and connect with Starbucks' consumers in a different way. Frankly, we've just begun, and there's a lot of work to be done yet."

Gillett's keenly aware of the stakes and his role. "I feel like the pressure is equally distributed among the executive team," he says. "I'm part of the team, and the pressure is shared."

The Evolution of a Next-Gen CIO

Gillett knows a thing or two about pressure and being a team player. He was a member of the University of Oregon Ducks football team, which plays in the Pac-10 Division 1 football conference and usually competes in big-time bowl games, like Gillett's team did in 1996 at the Cotton Bowl. Gillett played the offensive guard position, where the success of the entire offense depends on five large men working in concert to provide protection for the quarterback and open lanes for running backs.

At a glance, Gillett is both a contradiction and affirmation of IT stereotypes: a jock—but also an MBA grad—and once one of the top guild masters in the online role-playing game *World of Warcraft*. Those gaming skills helped Gillett land a senior director of engineering position at Yahoo and they've enhanced his leadership skills more than his MBA coursework, says John Seely Brown, director emeritus of Xerox PARC and a visiting scholar at the University of Southern California, whom Gillett counts among his vast social network.

Former managers describe Gillett as a socially gifted and highly charismatic businessperson. Just how charismatic? In 2006, he became the CIO of Corbis, which is owned by Bill Gates. During his tenure, Gillett often went head to head with Gates on internal technology-purchasing decisions and persuaded Gates to adopt tech platforms that were, in some instances, from Microsoft's competition, such as SAP's ERP products.

"Stephen was able to explain to Bill why Bill's product wasn't the right product," says Ted Cahall, president of products and technologies AOL, whom Gillett worked under at CNET and who twice attempted to hire Gillett for AOL's CIO-level position.

"You'll meet a lot of technology people who are extremely intelligent but they have really stunted social skills," Cahall says. "They don't have an ability to sell their ideas and don't have the ability to ingratiate themselves with key leaders. Stephen does that so well."

Of course, you don't become CIO of any orga-

nization without having the technical chops. At 12 Entrepreneur, where Seely Brown and Gillett worked together, Seely Brown says that under Gillett's watch, the company installed the first complete VoIP (voice over internet protocol) Cisco system and "bet our entire enterprise on it working," he writes in an e-mail. The system worked quite well. "I think [Gillett] even helped Cisco debug the system," Seely Brown says. Cisco used some of 12 Entrepreneur's learnings in a product-training video. "[That's] just one simple example of thinking both about the technology," says Seely Brown, "and the people."

"Stephen's not just about legacy systems and not just about efficiency. He's about how we take technology and connect with Starbucks' consumers in a different way."

—CHET KUCHINAD, EVP OF STARBUCKS
PARTNER RESOURCES

And, by the way, Gillett's just 32 years old. So it's a safe bet that he's one of the youngest Fortune 500 CIOs. But his take on leadership and success makes him sound older than his years. "Those are traits that are really age agnostic," Gillett says. "Having a proven track record is what really drives your ability to execute."

What emerges, then, is not only a picture of the IT leader who's tasked to transform Starbucks' technology infrastructure and digital in-store offerings, but also a glimpse of the next generation of CIOs: a technologist with an MBA, a socially adept leader with loads of ambition and a senior vice president of a multibillion-dollar company who uses the Web for LinkedIn as well as *World of Warcraft*.

Closer to Customers

In January 2008, long-time leader Howard Schultz returned as CEO to rescue the ailing company. Former CIO Bryan Crynes left shortly thereafter. It would have been reasonable for Starbucks to reach into the retail or restaurant industries for a seasoned and well-known IT chief to help drive its transformation.

"I was a bit surprised that they would call someone like me," Gillett concedes, given his lack of a traditional retail or supply chain background.

But Starbucks was "looking for a very different kind of CIO," Kuchinad says, one who could man-

age the traditional IT requirements and “bring innovation to some of the legacy systems.” Most importantly, the leadership team wanted a CIO who understood Starbucks’ new generation of customers and how they engaged with the brand in-store and online.

Paula Rosenblum, managing partner at Retail Systems Research and a former retail CIO, says Gillett’s hire was a signal of significant change. “Starbucks wanted to skew new and skew fresh,” she says, “and get out of this old and stodgy, ‘Well, if we do this in the supply chain, we’ll save 15 cents and cost control our way to profitability.’ That’s not what they’re about. They’re about the customer experience.”

Yet over the last few years, the company was so focused on the back end, “we were not devoting as many resources to the customer-facing side,” says Kuchinad. “What fascinated the leadership team was Stephen’s knowledge of where and how these consumers lived, and how he was technologically engaged with them. While he did not have the traditional retail IT experience, we wanted someone who was leading edge, who knew where the technology was evolving.”

Starbucks wanted a fresher blend: someone who

Gillett is both a contradiction and affirmation of IT stereotypes: a jock—but also an MBA grad—and once one of the top guild masters in the online role-playing game *World of Warcraft*.

could manage a traditional IT environment and provide a creative take on how technology could better serve its customers using tools such as remote ordering and automated systems, loyalty cards and business intelligence.

“When you look at our customers and what’s happening in our stores,” Gillett says, “you see wireless devices, iPhones, converged networks, laptops. You see a generation of customers who are entering our stores and engaging [with us] in new ways.”

Gillett believes that everything he learned at his previous employers is applicable to Starbucks’ retail model. “There are a lot of things a traditional retailer can learn from big Internet and big software, as far as scale, analytics and really using those tools that drive the Web-type companies,” he says.

A Grande Order

The “Starbucks experience” is something you’ll hear often from its executives. During the past several years, that experience has been diluted by overexpansion to some 17,000 stores worldwide, diverging product offerings, new coffee-making equipment and cut-throat competition from Dunkin’ Donuts and McDonald’s. In a highly publicized 2007 internal memo, Schultz, who was not running day-to-day operations but still held the chairman title, derided “the watering down of the Starbucks experience” and “the commoditization of our brand.”

Starbucks has been in a transformation mode since Schultz returned and took back the CEO reins. “Starbucks has to find a way in this economy of expressing the value message along with the indulgence factor,” says RSR’s Rosenblum. “So the challenge is to create, whether through technology [applications] or otherwise, that there’s the perception of value. Along with that, it’s really important for retailers to find clever and innovative ways to save money.”

Gillett’s priorities are wide ranging, but three in particular illustrate what he’s up against. First, he says he’s attempting to change internal perceptions of the IT department “from being perceived as and operating

like a traditional IT shop...to becoming a technology company and using the term ‘technology’ versus ‘IT’ when we look at how we’re going to transform our business.”

His plan includes aligning IT’s activities with those at the top of the company’s transformational

agenda, mainly its customer experience strategies. For example, ethical sourcing of coffee is a big piece of its social responsibility platform. Customer surveys have shown that it is important, and executives view it as a competitive differentiator.

Starbucks does have a system (using Oracle databases) that tracks coffee origin and other related information, Gillett notes. “If we want to increase the amount of fair-trade coffee or fair-trade cocoa in our inventory,” Gillett says, “technology has to be able to deploy a system that can track which purchases are actually fair-trade certified and which aren’t. You can’t make that type of a statement without having a technology impact.”

Gillett is also completing a previously planned global, multiyear Oracle ERP rollout. He spent his first couple of months learning the business and, ultimately, how the ERP rollout would impact business processes and activities. He

A Week in the Life of a Barista

See a **SLIDESHOW** of Starbucks’ CIO working the drive-thru at www.cio.com/special/slideshows/2009/01/starbucks_cio/index.

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found that in many cases, the ERP systems being introduced are replacing manual processes, "which is the most efficient thing you can do," Gillett says.

Perhaps his most crucial duty is to enhance Starbucks' ability to mine its customer data to help "reignite our passion with our customers," Gillett says. A lot is hanging on the loyalty card data (Starbucks' Reward cards) and BI reporting tools to extract meaningful customer analysis. At a financial analyst briefing in early December, Starbucks marketing executives talked up success they've had so far with the Starbucks Reward cards and the new Gold Card in 2008. One of the first positions Gillett opened up when he was hired was a VP of business intelligence.

"Analytics is an absolutely key driver of everything you do," Gillett says. "And generating BI demand across the business and strong analytics is something that Starbucks is going to usher in. Technology has to play an absolutely critical role in all that."

A November 2008 Aberdeen report on BI's use in the retail industry, as well as a survey of 150 companies, shows Gillett has considerable work ahead. "Many organizations spend months and endure significant costs to obtain the reporting and analysis capabilities that BI promises," writes Aberdeen research director David Hatch, "only to find that different 'ver-

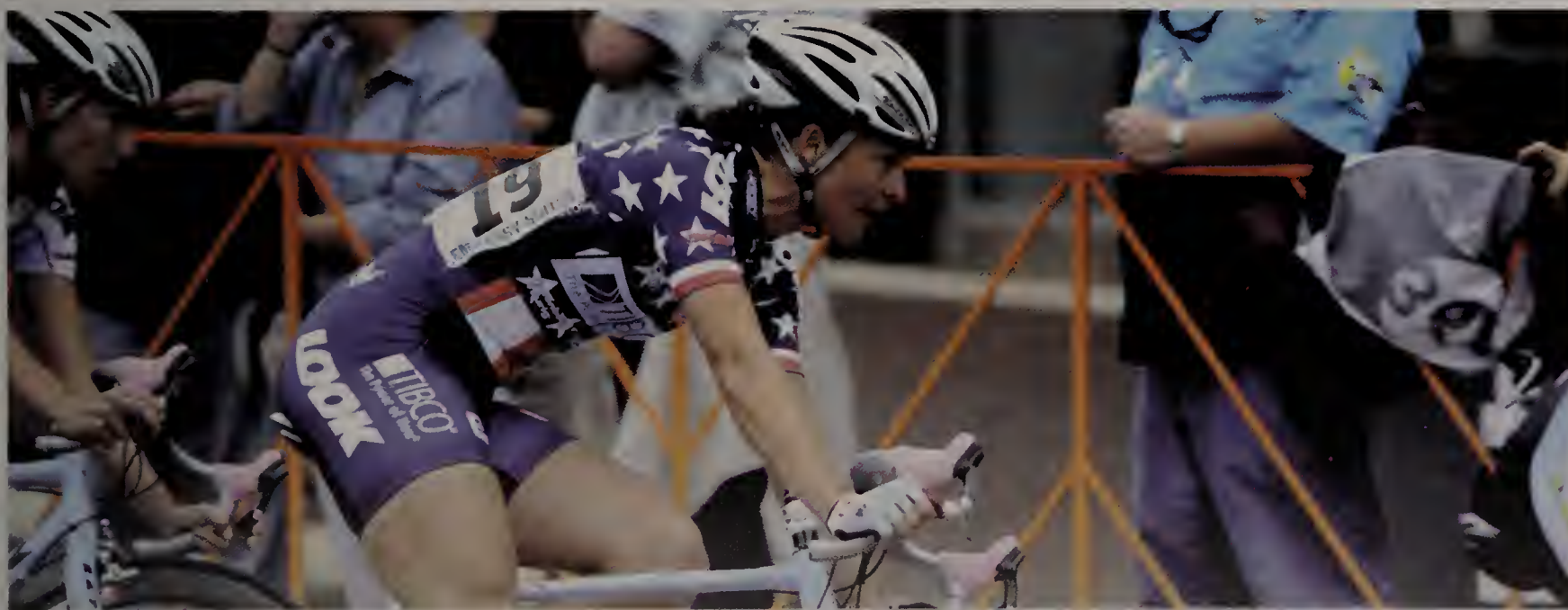
sions of the truth' still exist without any definite way of determining which one is real or accurate."

Gillett says that Starbucks is making progress but is nowhere near mastering BI. "[The business users] haven't indoctrinated it into everyday business decision making yet," he says. "We still have a lot of decisions based on real-time data, intuition or historical trends. I think in today's economic climate, having strong analytic and BI-based decision making can help give a new dimension to that."

As for the role that he and IT can play on the Starbucks team and in its transformation, he seems characteristically assured of himself.

"Technology and IT have a critical role in all that because we have to understand our customers with [respect to] today's economic climate and the cost pressures they face," Gillett says. "We have to understand our customers in ways that we've never had to in the past. I think BI and data warehousing and consumer insights from a marketing perspective are going to be what give us that view into the Starbucks customer." **CIO**

Senior Online Editor Thomas Wailgum can be reached at twailgum@cio.com. To comment on this story, go to www.cio.com/article/474127.



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Agile at the Wheel

The CIO at transportation company Con-way adopted Agile development practices—a journey that required revving up change leadership skills

BY JACKIE BARRETTA

In the old days, we could spend months planning a technology project and then months or even years implementing it. Not anymore. Strategies are far more dynamic these days, especially as we respond to these challenging economic times. When someone has a good idea, they want to see it come to fruition right away.

At Con-way, almost all good ideas require technology to implement. Yet historically, ideas would become cold by the time they made it through IT

steering committees, project planning and design reviews. Then we became agile—that is, we adopted Agile development practices.

Using Agile, software development is no longer accomplished through lengthy projects. Instead, the overall concept of the desired system is defined at a high level up front and then developed in short iterations. An iteration is typically no longer than one month, and the software is released for use after each iteration. As people use the software, they determine which features should be built next, providing a feedback loop that results in the highest priority functionality being built.

The adoption of Agile requires significant

change in the work practices of both IT team members and business users, and this created a change-leadership challenge for me as the CIO.

One big change for IT is that with Agile, there is always an impending implementation date: There is never a feeling of being able to relax on a project. Meanwhile, developers, used to having private space, can feel that space violated due to “pair programming,” which has two developers constructing the same piece of code at the same time, and to colocation, which has team members sitting as close together as humanly possible. As for the business users, Agile requires them to take a much more active

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role through the entire process. They must work jointly with IT to determine the priorities for each iteration, and they must provide daily direction to IT on the needs for the functionality being built.

Selling the Benefits

The challenges in transitioning the IT teams to Agile was primarily overcoming their resistance. They had become comfortable with their old techniques, and they had been successful with them. In addition, they had heard about many failures of Agile initiatives, so they were skeptical. Selling it to the business executives was equally challenging because the price tag for consultants to teach us the new methodology and for the new tools we would need to implement it was pretty steep. Plus, they had to accept that new projects would take longer, temporarily, while IT people learned the new techniques.

I made the case for change in IT by explaining how the business would benefit if we delivered the highest priority functionality faster. I also kept reiterating what was in it for them—and there was a lot. Agile automates many of the mundane tasks that are not popular with software developers. For example, when changes are made to code, Agile techniques automatically integrate the code with surrounding functions and execute predefined regression tests. Most IT professionals are not fond of performing these tasks manually.

I made the case for change to the business by preparing a solid ROI that quantified the benefits of increasing the efficiency of development processes, delivering the right functionality more quickly and reducing the overall amount of work in progress. For instance, I proposed that Agile would improve developer efficiency by 35 percent. In many forums, I repeated the business drivers and showed my colleagues how we were tracking on achieving the ROI.

Even though we have dozens of project teams and hundreds of developers, I made a commitment to spend time (during some periods about a third of my time) with the development teams and listen to their concerns. From this I learned about their resistance to the strict adherence to the Agile definition prescribed by the consultants we hired. The developers especially didn't like being forced to work in pairs

or sit near each other, and they believed they should be able to decide individually whether to adopt those practices.

I was concerned we'd miss out on significant

benefits of Agile if we didn't follow those practices, so I made a rule that every person had to initially follow the practices precisely. I told them that as they became knowledgeable in the practices they could tweak them, and when they really understood them they could decide which ones to adopt. So far most people who have experienced the practices have decided to adopt them for the long term.

Calming the Storms

Not everything has gone smoothly. New teams typically go through four stages: forming, "storming," norming and then performing. What I didn't know was that when you change an existing team's fundamental work practices, they start over again in the forming stage.

Teams that had been working well together for years suddenly began exhibiting "storming" behaviors, including fluctuations in attitudes, arguing over trivial issues and excessive tension and concern about being overworked. Now I'm making sure that as teams go through the transition, they are conscious of the fact that they need to reset their norms

New teams typically go through four stages: forming, "storming," norming and then performing. I didn't know that when you change an existing team's fundamental work practices they start over again in the forming stage.

and that they set aside time to do it.

The change effort has been worth it: After nine months, Agile is delivering on its promises. The iterative approach to software development is providing a feedback loop that results in us building the right functionality. We no longer have the waste problem that was inherent in the old waterfall method. Agile is creating greater alignment between IT and the business because of the constant, daily interaction and because Agile techniques help IT personnel understand the business better.

Like anything that's really going to pay off, Agile is a huge change for IT and the user community. For CIOs who want to lead their organization down the Agile path, it's essential to brush up on change leadership best practices. Most importantly, create an environment where your teams are comfortable with venting their concerns so you'll know what's working and what you need to modify. **CIO**

Jackie Barretta is CIO and vice president of Con-way, and a member of the CIO Executive Council. To comment on this article, go to www.cio.com/article/476122.



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¹⁰ Ibid., 1: 6. The author notes that, "the few American missionaries who did not condemn the war."

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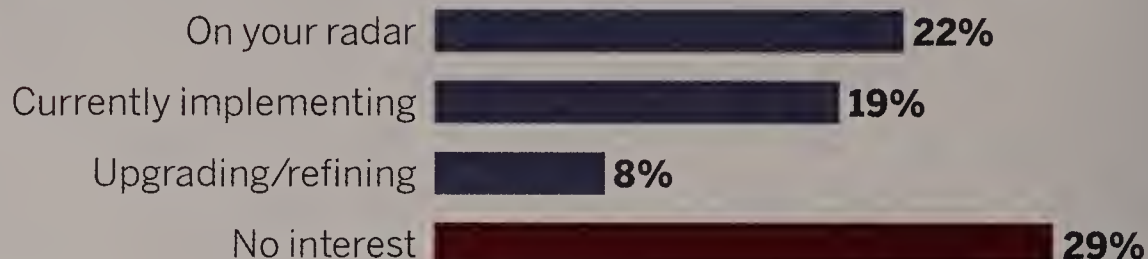
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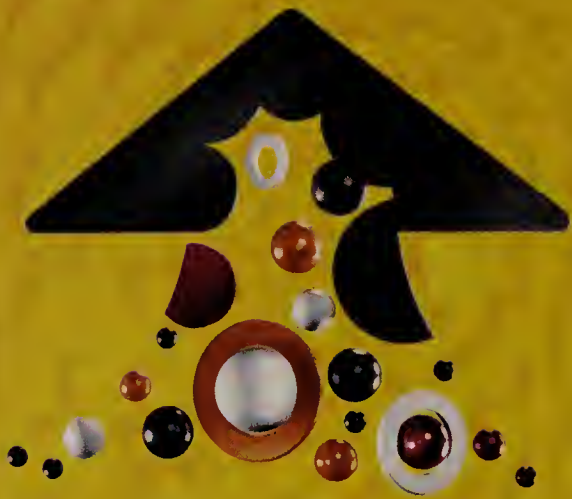
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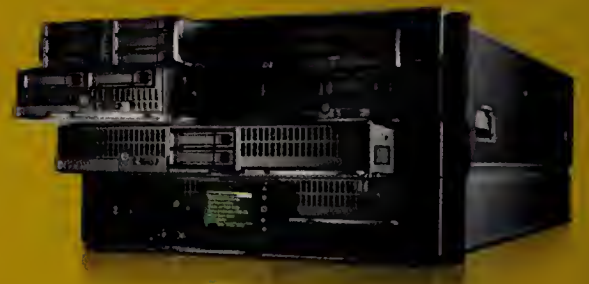
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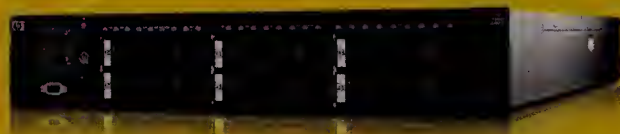
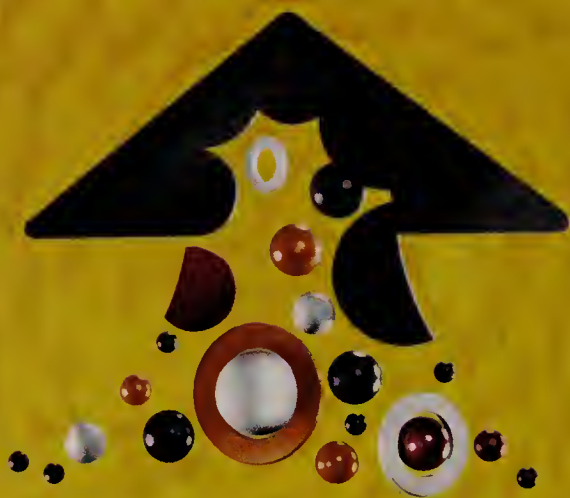
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